

REMARKS

Status of the Claims

Claims 1-32 are pending in the application. All claims stand rejected. By this paper, claims 1, 2, 5-7, 10-23, 25, and 26 have been amended. For the reasons set forth below, Applicant submits that each of the pending claims is patentably distinct from the cited prior art and should be in condition for allowance. Reconsideration of the claims is therefore respectfully requested.

Claim Rejections – 35 U.S.C. § 102

By the office action dated September 7, 2007, claims 1-2, 4-18, and 22-32 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,949,745 to Howell ("Howell"). Additionally, claims 1-32 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,505,707 to Manzie, et al. ("Manzie").

One problem encountered with existing contrast media delivery systems relates to the high viscosity of contrast media. The high viscosity of the contrast media exhibits a surface tension that can prevent the contrast media from easily flowing into a spike and/or tubing. The cited prior art references are primarily directed to less viscous parenteral or irrigating fluids, such as saline or sterile water, that do not have the particular challenges of contrast media delivery.

The embodiments of the cited references are not designed to deal with the challenges of overcoming the surface tension of contrast media. In point of fact, the operation of such devices appear to teach away from the design of the claimed invention which is directed to creating sufficient pressure in the reservoir of contrast media to begin and maintain the flow of contrast media during such procedures. The ability to begin and maintain the flow can be particularly important given the intermittent starting and stopping of the flow of the contrast media during the procedure. The claimed invention is designed to provide improved pressurization in the contrast media reservoir to overcome these problems. The claims have been amended to more clearly illustrate the disclosed improvements over the prior art.

Independent claim 1, 11, 22, and 26 have been amended to clarify that the primer bulb is configured to “transmit air from a position downstream from the spike, through the spike and into the contrast media source or reservoir and thereby create a head of pressure in the contrast media source.” The head of pressure in the contrast media source exerts a downward force on the contrast media to overcome the surface tension. Additionally, claims 11 and 26 recite that compressing the primer bulb “increase[s] the pressurization in the contrast media reservoir, such that the pressurization in the reservoir subsequent to actuation of the primer bulb is greater than the pressurization in the reservoir before actuation of the primer bulb.”

Applicant respectfully submits that neither Howell nor Manzie teach or disclose “transmit[ting] air from a position downstream from the spike, through the spike and into the contrast media source and thereby create a head of pressure in the contrast media source” or “increase the pressurization in the contrast media reservoir, such that the pressurization in the reservoir subsequent to actuation of the primer bulb is greater than the pressurization in the reservoir before actuation of the primer bulb” as recited in independent claims 1, 11, 22, and/or 26.

Howell

Howell discloses “[a] device for administering parenteral fluids intravenously at a uniform rate achieved by a floating siphon-type flow regulating means.” Howell, Abstract. The primer bulb of Howell does not create a head of pressure in the fluid source by transmitting air into the fluid source. Rather, the primer bulb 38 of Howell begins a siphoning process by drawing in fluid from a fluid container 16A of a fluid regulator 16. See Howell, col. 4, lines 55-67. In essence, the bulb only pulls or draws in fluid.

The design of Howell teaches away from the claimed invention by disclosing a primer bulb which creates a negative pressure downstream from the line rather than by creating a positive pressure in the line upstream from the bulb as provided in the claimed invention. Specifically, the primer bulb only starts the flow of fluid if there is fluid in fluid container 16A. When there is fluid in the fluid container the operable end of

the siphon tube is necessarily submerged creating a fluid barrier. See Howell, col. 2, lines 62 through col. 3, line 31. As a result of the presence of the fluid barrier, when the primer bulb is compressed, any air pushed out of the primer bulb will pass into receiving reservoir 24 rather than fluid container 16A or fluid supply 10. In other words, the design of Howell appears to prevent the utilization of the primer bulb to create of a head of pressure in fluid supply 10.

Additionally, it should be pointed out that the design of fluid container 16A prevents the creation of a pressure head in the fluid source 10. The air in fluid container 16A will necessarily pressurize before pressurizing the air in fluid supply 10. In the design disclosed in Howell, fluid will move from fluid supply 10 to fluid container 16A only under the force of gravity. Howell, col. 4, lines 37-41. In contrast, the design of the present invention is specifically directed to providing additional positive pressure in the contrast media source rather than relying of gravitational forces alone.

Applicant respectfully submits that Howell fails to disclose a primer bulb "adapted to transmit air from a position downstream from the spike, through the spike and into the contrast media source and thereby create a head of pressure in the contrast media source to facilitate flow of contrast media." As a result, Applicant respectfully submits that independent claims 1, 11, 22, and 26 are not anticipated or rendered obvious in light of Howell. Applicant respectfully submits that because the dependant claims include the limitations of the independent claims, dependant claims 2, 4-10, 12-18, 23-25, and 27-32 are also in condition for allowance.

Manzie

Manzie discloses a tubing set for connecting a source of fluid to a surgical instrument. The tubing set includes a first section having an inlet, a second section having an outlet, a pump connected between the first and second sections, and "a valve located between the inlet and outlet" to restrict flow so that flow is in a direction from the inlet toward the outlet. Manzie, Abstract. The valve ensures that no fluid can flow back into the fluid source when the pump is operated. Manzie, col. 3, lines 14-20. As a result, the primer bulb of Manzie is specifically designed not to create a head of

pressure in the fluid source. The primer bulb may create a void of pressure in the tubing, but the valve prevents an increase of pressure in the fluid source. As a result, the device of Manzie is not designed to overcome the surface tension of contrast media.

Applicant respectfully submits that Manzie fails to disclose a primer bulb "adapted to transmit air from a position downstream from the spike, through the spike and into the contrast media source and thereby create a head of pressure in the contrast media source to facilitate flow of contrast media." As a result, Applicant respectfully submits that independent claims 1, 11, 22, and 26 are not anticipated or rendered obvious in light of Manzie. Furthermore, as dependant claims include the limitations of the independent claims, dependant claims 2-10, 12-21, 23-25, and 27-32 also are not anticipated by Manzie.

CONCLUSION

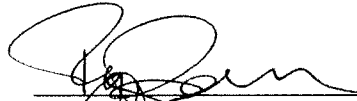
Applicant respectfully assert that claims 1-32 are patentably distinct from the cited references. The references do not teach a priming bulb adapted to "transmit air into a contrast media source to thereby create a head of pressure in the contrast media source. Additionally, the references fail to disclose that operation of the primer bulb "increase[s] the pressurization in the contrast media reservoir, such that the pressurization in the reservoir subsequent to actuation of the primer bulb is greater than the pressurization in the reservoir before actuation of the primer bulb." The designs taught in the Howell and Manzie references do not teach or suggest the benefits of the claimed invention.

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims define patentable subject matter and a Notice of Allowance is requested. Should questions exist after consideration of the foregoing, the Examiner is kindly requested to contact the Applicants' attorney at the telephone number given herein.

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